

**CLAIMS**

What is claimed is:

1. A method for detecting cytotoxic activity of a population of immune effector cells against a population of target cells, the method comprising the steps of, in  
5 combination:
  - a) exposing a population of immune effector cells to a population of target cells;
  - b) incubating the cells for a sufficient period of time and under conditions suitable for an immune effector cell to affect the target cell such that an apoptotic pathway in the target cell is activated;
  - 10 c) fixing and permeabilizing the mixed population of cells;
  - d) exposing the mixed population of cells to a detectable reagent having the ability to bind a protein or fragment thereof that undergoes a change during or results from the apoptotic process; and,
  - e) detecting the detectable reagent.
- 15 2. The method of claim 1 wherein the immune effector cells are T cells.
3. The method of claim 1 wherein the target cells are virally-infected cells or tumor cells.
4. The method of claim 1 wherein the protein of step d) is a caspase.
5. The method of claim 4 wherein the caspase is caspase-3.
- 20 6. The method of claim 1 wherein the detectable reagent is an antibody.
7. The method of claim 1 wherein the detectable reagent is a fluorescently tagged antibody.
8. The method of claim 1 wherein the detection of step e) is accomplished using a flow cytometer.

25